What is claimed is:

1. A method of manufacturing a thin-film magnetic head, the head comprising:

a medium facing surface that faces toward a recording medium;

a first pole layer and a second pole layer that are magnetically coupled to each other and include magnetic pole portions opposed to each other and located in regions of the pole layers on a side of the medium facing surface;

a gap layer provided between the pole portion of the first pole layer and the pole portion of the second pole layer; and

a thin-film coil, at least part of the coil being disposed between the first and second pole layers and insulated from the first and second pole layers, wherein

the second pole layer incorporates a track width defining portion for defining a track width, the method comprising the steps of:

forming the first pole layer;

forming the thin-film coil on the first pole layer;

forming the gap layer on the pole portion of the first pole layer;

forming a mask on the gap layer for making an end portion of the gap layer for defining a throat height;

forming the end portion of the gap layer by selectively etching the gap layer and a portion of the first pole layer through the use of the mask;

forming a nonmagnetic layer so as to fill etched portions of the gap layer and the first pole layer while the mask is left unremoved;

removing the mask after the nonmagnetic layer is formed; and

forming the second pole layer on the gap layer after the mask is removed.

2. The method according to claim 1, wherein the throat height is defined by a position in which the end portion of the gap layer and the first pole layer are in contact with each other.

3. The method according to claim 2, further comprising the step of flattening top surfaces of the gap layer and the nonmagnetic layer by polishing, the step being provided between the step of removing the mask and the step of forming the second pole layer.

4. The method according to claim 3, wherein a depth to which the polishing is performed in the step of flattening falls within a range of approximately 10 to 50 nm inclusive.

5. The method according to claim 2, wherein the track width defining portion of the second pole layer is made flat.

6. The method according to claim 1, wherein: in the step of forming the nonmagnetic layer, at least a portion of the nonmagnetic layer near the end portion of the gap layer is disposed to protrude upward and reach a level higher than the top surface of the gap layer; and the throat height is defined by a position in which the end portion of the gap layer and the second pole layer are in contact with each other.

7. The method according to claim 6, wherein:

the second pole layer incorporates a first magnetic layer disposed on the gap layer and a second magnetic layer disposed on the first magnetic layer;

and

the step of forming the second pole layer includes the steps of:

forming the first magnetic layer on the gap layer;

flattening a top surface of the first magnetic layer by polishing; and

forming the second magnetic layer on the flattened top surface of the first magnetic layer.

8. The method according to claim 7, wherein a depth to which the polishing is performed in the step of flattening falls within a range of approximately 10 to 50 nm inclusive.

9. The method according to claim 1, further comprising the step of etching the gap layer and a portion of the first pole layer to align with a width of the track width defining portion of the second pole layer, so that each of the portion of the first pole layer, the gap layer and the track width defining portion has a width taken in the medium facing surface that is equal to the track width.

10. The method according to claim 1, wherein:

the step of forming the second pole layer includes the steps of: forming a magnetic layer on the gap layer; and etching the magnetic layer by reactive ion etching so that the magnetic layer etched serves as the second pole layer; and

the gap layer is made of a nonmagnetic inorganic material.

11. The method according to claim 10, wherein the nonmagnetic

inorganic material is one of the group consisting of alumina, silicon carbide and aluminum nitride.